

Safety Office

1. Introduction

The Safety Office is not only in charge of radiation safety but also of general safety of the laboratory workers, such as ensuring the safe use of chemicals and high-power laser devices. We also handle radiation safety in New SUBARU.

2. Radiation Safety

2.1 Application for License for New Radiation Facilities

We have submitted applications for a license three times in 1998 to the Science and Technology Agency.

With the first application, accepted on March 11 and approved on April 21, the maximum permissible current of the storage ring was increased from 20 mA to its design value of 100 mA.

The second application, submitted on July 15 and approved August 18, the construction of four new beamlines, *i.e.*, BL16XU, BL16B2, BL29XU and BL44XU, the use of small sealed sources, and the setting up of an RF-gun test stand (a low-power linear accelerator of 4.5 MeV).

The last application sought minor modifications of the facilities.

The application for the license of New SUBARU, which we submitted on December 12, 1997, was approved on June 17.

2.2 Radiation Safety Inspections

Two newly approved radiation facilities, New SUBARU and L3 beam transport line of the linear accelerator, were given official radiation safety inspections by the Nuclear Safety Technology Center in 1998. The pre-commissioning inspection was conducted August 25-26, and the permission to start the commissioning was given on September 11.

2.3 Radiation Monitoring

We regularly surveyed the radiation dose level throughout the workspace, on the periphery of the controlled area, and at the boundary of the institution. According to the data of the survey, radiation shielding of the cable duct's mouths on the ceiling of the storage ring tunnel was improved, and the streaming leakage level was not serious.

A series of intensive surveys of the radiation leakage was planned with the commissioning of New SUBARU, and the survey was conducted by evacuating the experimental hall of New SUBARU. As the commissioning of New SUBARU is still continuing, a related survey was not completed within 1998.

2.4 Radiation Safety System

The interlock system and the access control system were extended to the L3 beam transport line, L4 beam transport line, New SUBARU and biomedical imaging center.

An interlock set of the radiation area monitor, which is complementary to radiation shielding, was introduced to the interlock system of the L3 beam transport line.

2.5 Registration of Radiation Workers and Personal Dose Monitoring

2,075 individuals were registered as radiation workers of SPring-8 in 1998, 250 of them were also registered to New SUBARU.

The radiation dose of each of these radiation workers has been monitored monthly with glass dosimeters or film badges. All records were within the region of background fluctuation.

We have revised the radiation safety training videos this year. The videos were produced with the voluntary cooperation of staff members of SPring-8 as actors, actresses and extras.

3. Other Safety Issues

3.1 Chemical Hazards

An advisory committee on chemical hazards discussed the safety procedures of experiments using reactive or toxic gasses. According to the recommendation of the committee, a supplemental exhaust pipeline, exhaust treatment apparatus and an alarm system for the leakage of toxic gas were installed in the concerning experimental hutch.

3.2 High Power Laser Devices

SPring-8 introduced guidelines for the safe use of high power laser devices in 1998 according to the recommendations of the Ministry of Labor. These guidelines cover all laser devices classified as 3A, 3B or 4.

A class 4 laser device equipped in the experimental hutch of BL44B2 was the first unit to be made to conform to these guidelines.